

25354

ENVIRONMENTAL RESTORATION PROGRAM

Monthly Report For
September, 1991



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 **EG&G ROCKY FLATS**

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**U.S. DEPARTMENT OF ENERGY
ROCKY FLATS PLANT
ENVIRONMENTAL RESTORATION
PROGRAM**

**MONTHLY REPORT FOR
SEPTEMBER 1991**

REVIEWED FOR CLASSIFICATION BY
By RT Dalling (initials)
Date 10/16/91

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1.0 INTRODUCTION

This Monthly Status Report presents the current status and technical achievements of the Rocky Flats Environmental Restoration Program for September 1991. This Program implements the Interagency Agreement (IAG) between the U.S. Department of Energy, the U.S. Environmental Protection Agency, and the State of Colorado to investigate, assess, and remediate, where necessary, contaminated areas at or adjacent to DOE's Rocky Flats Plant in Golden, Colorado. This agreement was signed on January 22, 1991. The work is being performed for DOE by EG&G Rocky Flats, Inc.

Section 2.0 of this report, the Executive Summary, highlights significant achievements and summarizes the milestones completed during September. It also presents any major unresolved issues of the Program. Technical progress, schedule status, and milestone status for each Operable Unit as well as other Program activities are presented in Section 3.0. Operable Units in which no FY91 activity was planned are not included. Section 4.0 contains the schedules for routine environmental sampling as required by paragraph 210 of the Interagency Agreement. Section 5.0 contains a list which identifies the contractors and subcontractors performing work on the Program as required by paragraph 13 of the IAG.

2.0 EXECUTIVE SUMMARY

2.1 SIGNIFICANT ACTIVITIES AND ACHIEVEMENTS FOR THE REPORT MONTH

Drilling and sampling activities continued during September on the OU1 - 881 Hillside. A total of 55 holes (35 boreholes, 11 monitoring wells, 9 abandoned wells) have been drilled on this Phase III Project as of the end of September.

EPA approval of Technical Memorandum 1, the revised chemical analysis program for the OU1 - 881 Hillside field program, was received August 30, 1991 and implemented September 4, 1991. This resulted in eliminating acid and base/neutral extractable, and pesticide/PCB analyses from 20 boreholes and 14 monitoring wells.

ET LaFore, EG&G's subcontractor for the OU1 - 881 Hillside Phase II-A equipment installation in 891 Building, is 95 percent complete with CPVC pipe installation. Pipe heat tracing and insulation is in progress and is approximately 20 percent complete.

DOE/RFO approved the OU1 Phase II-B french drain construction contract on September 13, 1991. The contract was awarded September 17, 1991.

The OU2 remedial investigation borehole and sampling activities continue to operate smoothly. A second drill rig was mobilized September 10, 1991. As of September 30, 1991, two boreholes and eight monitoring wells were completed. Eleven core samples have been collected for VOC analysis. The samples have been packaged and shipped to laboratories for analysis.

The OU2 Surficial Soils Sampling Program continues to be on schedule. Seventeen test pits are complete out of the total 26 as of September 30, 1991. 132 surficial soil samples and 110 soil samples from the test pits have been collected and shipped for analysis. The CDH sample sites were completed as of September 23, 1991.

EPA and CDH were presented with a Revised Technical Memorandum No. 2 detailing RFP's approach to chemical analysis of environmental samples on OU2. A brief orientation was provided to facilitate regulatory agency review. Negotiations were finalized September 26, 1991.

The OU2 Walnut Creek IRA granular activated carbon (GAC) treatment system collected, treated, and discharged over 300,000 gallons of surface water during September. Reconfiguration of the lead/polish vessels was successfully completed on September 13, 1991.

DOE/RFO is continuing the design/build option for a new radionuclides removal system, for OU2 IRA, through a subcontractor. The specifications and drawings package is being reviewed by DOE/RFO.

Historical data was retrieved from the Rocky Flats Environmental Database System (RFEDS) in order to begin the OU2 Historical Data Assessment. This project will support colloidal studies for OU2 Walnut Creek, as well as microfiltration under the Sitewide Treatability Studies Program.

The OU2 draft Interim Measures/Interim Remedial Action/Environmental Assessment (IM/IRA/EA) Plan is continuing through the DOE/HQ approval process. The revised draft Plan was submitted for HQ approval on September 6, 1991. The approved document is expected to be formally submitted to EPA

and CDH for review and comment on October 2, 1991.

The OU3 Offsite Areas Jefferson County Remedy Lands Semi-annual Report was delivered by EG&G to DOE/RFO for submittal to Jefferson County. This report details results of soil sampling and revegetation activities on the Settlement Agreement Lands east of Indiana Street.

EPA and EPA contractor representatives toured OU3 with EG&G staff and contracted RI Work Plan ecologists to discuss development of the Environmental Evaluation Work Plan (EEW).

Revision of the OU4 Solar Ponds IM/IRA Plan was completed and delivered to RFO on September 3, 1991. CDH has given conditional approval of the Plan. The proposed OU4 Solar Evaporation Ponds IM/IRA Decision Document was released for a 60-day public comment period beginning September 9, 1991.

An EG&G subcontract to prepare the final OU4 Phase I RFI/RI Work Plan was awarded September 20, 1991.

The first phase of vegetation production measurements was completed, and the Fall bird and fish sampling were initiated for the OUs 1, 2, and 5 environmental evaluations. Fall samples for small mammals continued and sampling for aquatic macrobenthos was initiated.

In a letter dated August 30, 1991 to DOE/RFO, CDH approved the Part A RCRA permit modification for: the decontamination facility located at the 881 Hillside; the granular activated carbon (GAC) unit at the 231A tank area; the interim waste storage facility for ER Program-generated wastes (Tent 1); and the proposed permanent Environmental Management Drum Storage Facility.

2.2 PROBLEMS AND PROGRAMMATIC ISSUES

The EPA's project manager for OU1 has left the EPA. Any impact is uncertain.

The laboratory analysis of the radionuclide suite is on hold because the laboratory capacities were exceeded. Turnaround on all laboratory analysis must be expedited to avoid a delay in preparation of the OU1 draft Phase III RFI/RI Report. These sample analyses are critical to the IAG schedule. The Richland Lab has capacity to take a small percentage of the samples.

The OU2 Phase II RFI/RI Bedrock Work Plan will require modifications that have been requested by EPA and CDH.

The September 30, 1991 milestone for completion of construction of the entire treatment system (metals/radionuclides system) at South Walnut Creek was not met. Delays, primarily associated with engineering/design and procurement activities are at issue with this milestone. EPA has rejected a DOE request for an extension of the milestone date.

Remedial actions for OU3 - Offsite Areas required under the 1985 McKay vs. U.S. Settlement Agreement may be in conflict with CERCLA. Tilling of the land surface to mix plutonium-contaminated surface soil, as required under the Settlement Agreement, prior to completion of the RI/FS, will probably not be an acceptable CERCLA regulated remedy. The remedial action as determined by the RI/FS process, if any, will probably not include plutonium soil mixing through tilling. EPA/CDH and DOE staff are working to resolve the issue.

The delay in removal of sludge from the OU4 solar ponds and the requirement for an IM/IRA for the surge tanks will impact the scheduled start of the RFI/RI field activities in January 1992. Further information regarding any schedule impacts will be available after the public comment period, ending November 6, 1991.

Western Aggregate has submitted a request to DOE to mine the mineral resources they own and which underlie a portion of the western edge of the Rocky Flats Plant. The land in question is located within OU11 - West Spray Field. DOE has had preliminary discussions with EPA on this matter, and EPA agrees with DOE that any decision on mining operations should be delayed until the OU assessment is complete. The DOE legal staff is reviewing the request from Western Aggregate. A meeting between the parties was held in September. Results are forthcoming.

There are environmental concerns that construction activities for the OU1 french drain will disturb a large area of currently vegetated and stable soils. This disruption has the potential to add significant amounts of sediment to downslope land surfaces and wetland areas adjacent Woman Creek and possibly Woman Creek itself. This potential disruption must be considered ecological stress that would not occur without the french drain construction. Silt fences and erosion berms will be constructed in order to minimize sediment migration.

Uncertainty with regard to the level of funding authority in FY92 is impacting the ability to issue major contract packages for FY92 activities. Delays to scheduled activities are anticipated to result if authorized workplan levels are not identified in early October.

2.3 NEAR-TERM IAG MILESTONES

<u>OU#</u>	<u>Milestone Description</u>	<u>Scheduled Completion</u>	<u>Actual Completion</u>
01	Begin IM/IRA Testing	05 Aug 91	02 Aug 91
05	Submit Final Phase I RFI/RI Work Plan	30 Aug 91	30 Aug 91
07	Submit Final Phase I RFI/RI Work Plan	28 Aug 91	28 Aug 91
01	Begin Phase II-B IM/IRA Construction	03 Sep 91	26 Aug 91
SW	Submit Final Radionuclide Discharge Limits Plan	16 Sep 91*	16 Sep 91
06	Submit Final Phase I RFI/RI Work Plan	16 Sep 91	16 Sep 91
02	Complete IM/IRA Construction	30 Sep 91**	
02	Begin Field Treatability Testing (Entire System)	30 Oct 91***	
04	Submit Final Phase I RFI/RI Work Plan	26 Nov 91	
09	Submit Final Phase I RFI/RI Work Plan	26 Nov 91	
10	Submit Draft Phase I RFI/RI Work Plan	27 Nov 91	
03	Submit Final Phase I RFI/RI Work Plan	06 Dec 91*	

* Indicates a revised date.

** Extension of OU2 milestone date to September 24, 1992, denied by EPA.

*** Extension of OU2 milestone date to September 25, 1992, denied by EPA.

3.0 PROJECT STATUS

3.1 OU1 - 881 HILLSIDE AREA

DESCRIPTION:

The soil and groundwater at the 881 Hillside Area, located north of Woman Creek in the southeast section of RFP, were potentially contaminated in the 1960s and 1970s with solvents and radionuclides. The various individual hazardous substance sites that make up OU1 are being investigated and treated as high-priority sites because of elevated concentrations of organic compounds in the near-surface groundwater and the proximity of the contamination to a drainage system leading to an offsite drinking water supply. The selected Interim Remedial Action (IRA) at OU1 involves construction of an underground drainage system (french drain) that will intercept and contain contaminated groundwater flowing from the OU1 area. The contaminated water will be treated at the 891 treatment facility, designed for this purpose, and released back into the interceptor ditch alongside Woman Creek.

3.1.1 OU1 ASSESSMENT

SCOPE OF WORK CHANGES:

EPA approval of Technical Memorandum 1, the revised chemical analysis program for the 881 field program, was received August 30, 1991. The program was implemented September 4, 1991. Analysis was streamlined to a more appropriate group of chemicals where previous sampling has indicated no contamination. This resulted in eliminating acid and base/neutral extractable, and pesticide/PCB analyses from 20 boreholes and 14 monitoring wells.

TECHNICAL APPROACH CHANGES: None

MILESTONE ACCOMPLISHMENTS:

Submit Draft Phase III RFI/RI Work Plan
Submit Final Phase III RFI/RI Work Plan

06 Feb 90
31 Oct 90

SEPTEMBER WORK ACTIVITY STATUS:

Drilling and sampling activities continued on the OU1 RI. A total of 55 holes have been drilled on this Phase III Project as of September 25, 1991. There is a total of 35 boreholes, 11 active monitoring wells and 9 monitoring wells that were abandoned due to geologic conditions. An average of five samples per hole have been taken, bringing the total number of down-hole samples taken to date to 275.

PLANNED WORK FOR OCTOBER:

Drilling and sampling activities will continue on OU1 RI.

PROBLEMS:

The EPA's project manager for OU1 has left the EPA. Any impact is uncertain. RFO and EG&G staff are preparing to provide a briefing for the replacement project manager.

The laboratory analysis of the radionuclide suite is on hold. On August 20, 1991, EG&G directed that all samples for radionuclide analysis be put on hold because the laboratory capacities were exceeded. These sample analyses are critical to the schedule for the subsequent report. The Richland Lab has capacity to take a small percentage of the samples alleviating some of the backlog of these samples. Turnaround on all laboratory analysis must be expedited to avoid a delay in preparation of the RFI/RI report.

The direction given by EG&G NEPA to avoid drilling any holes in the 100-year flood plain until they get an additional categorical exclusion (CX) may create a potential delay in the OU1 RI. A decision by October 15, 1991 is necessary to avoid delays.

OPEN ITEMS: None

3.1.2 OU1 REMEDIATION

SCOPE OF WORK CHANGES: None

TECHNICAL APPROACH CHANGES: None

MILESTONE ACCOMPLISHMENTS:

Submit Draft Proposed IM/IRA Decision Document	18 Sep 89
Submit Proposed IM/IRA Decision Document	06 Oct 89
Submit Final IM/IRA Decision Document	05 Jan 90
Begin Phase I-A IM/IRA Construction	15 Jan 90
Restart Phase I-A IM/IRA Construction (after shutdown)	20 Jun 90
Begin Phase I-B IM/IRA Construction (ahead of schedule)	28 Sep 90
Submit IM/IRA Implementation Document	22 Feb 91
Begin Phase II-A IM/IRA Construction	01 Apr 91
Begin IM/IRA Testing	05 Aug 91
Begin Phase II-B IM/IRA Construction	03 Sep 91*

*Actual date construction began was August 26, 1991

SEPTEMBER WORK ACTIVITY STATUS:

ET LaFore, EG&G's subcontractor for the OU1 881 Hillside Phase II-A equipment installation in 891 Building, is 95 percent complete with CPVC pipe installation. Pipe heat tracing and insulation is in progress and is approximately 20 percent complete. Systems operations testing continues with hydrotesting of pipelines.

RFO approved the OU1 Phase II-B french drain construction contract on September 13, 1991. The contract was awarded September 17, 1991. Jennison Construction, EG&G's subcontractor for the OU1 Phase II-B french drain construction, has submitted a site-specific health and safety plan. RFO is presently reviewing this plan. Also, safety training of the subcontractor's employees is in progress.

IT Corporation, an EG&G subcontractor, submitted a proposal for operation and maintenance of the OU1 IRA groundwater treatment system. EG&G is preparing a technical evaluation of the proposal.

Peroxidation Systems, Inc., an EG&G subcontractor, received the test samples of composited water and bench-scale testing of the UV/Peroxide treatment system. The confirmation bench-scale tests were conducted September 25, 1991 and were witnessed by DOE/HQ and EG&G staff. Tests results are now being analyzed.

Concerns regarding the possibilities of crossing of the Westgas pipelines and the interceptor trench have been resolved. With the correction of the french drain drawings which reduced the drain length to approximately 2000 feet, the french drain will not cross Westgas pipelines. The staking of the french drain has shown that, although construction will come close to the interceptor trench in places, it will not cross it.

PLANNED WORK FOR OCTOBER:

- Begin Effluent Tank construction
- Begin French Drain excavation
- Install Ion Exchange Unit
- Continue Systems Operations testing

PROBLEMS:

There are environmental concerns that construction activities for the french drain will disturb a large area of currently vegetated and stable soils. This disruption has the potential to add significant amounts of sediment to downslope land surfaces and wetland areas adjacent Woman Creek and possibly Woman Creek itself. This potential disruption must be considered ecological stress that would not occur without the french drain construction. Silt fences and erosion berms will be constructed in order to minimize sediment migration.

OPEN ITEMS: None

3.2 OU2 - 903 PAD, MOUND, AND EAST TRENCHES

DESCRIPTION:

The contamination at the 903 Pad and Mound areas is largely attributed to the storage in the 1950s and 1960s of waste drums that corroded over time, allowing hazardous and radioactive material to leak into the surrounding soil. Additional contamination may have resulted from wind dispersion during removal and soil movement activities. The East Trenches Area was used for disposal of plutonium- and uranium-contaminated waste and sanitary sewage sludge from 1954 to 1968. Two areas adjacent to the trenches were used for spray irrigation of sewage treatment plant effluent, some of which may have contaminants that were not removed by the treatment system.

The IM/IRA Plan provides for surface water seeps in source areas of contamination to be collected, treated, and discharged to the surface water system. Operation of a field-scale treatability unit began for the Walnut Creek drainage in May 1991. The effectiveness of the treatment process will be evaluated at three locations: the entrance to the treatment facility, several points within the facility, and the discharge point. After completion of the field-scale treatability tests, the unit is anticipated to remain in service until the final remedial action is operational. Bench-scale testing of surface water in the Woman Creek drainage is now being conducted, after which a separate Interim Remedial Action Plan for this drainage will be developed.

3.2.1 OU2 ASSESSMENT

SCOPE OF WORK CHANGES: None

TECHNICAL APPROACH CHANGES: None

MILESTONE ACCOMPLISHMENTS:

Submit Draft Phase II RFI/RI Work Plan (Alluvial)	21 Dec 89
Submit Final Phase II RFI/RI Work Plan (Alluvial)	12 Apr 90
Submit Draft Phase II RFI/RI Work Plan (Bedrock)	05 Feb 91
Submit Final Phase II RFI/RI Work Plan (Bedrock)	02 Jul 91

SEPTEMBER WORK ACTIVITY STATUS:

EPA and CDH have requested changes to the final OU2 Phase II RFI/RI Bedrock Work Plan. These modifications to the Field Sampling Plan include a statement on the borehole abandonment program for the pre-1986 boreholes and clarification on the addition of new monitor wells to unknown sandstone intervals that are greater than 3 feet thick encountered during the bedrock investigation. Work will progress in this area during October.

The OU2 remedial investigation borehole and sampling activities continue to operate smoothly. The program started with the mobilization of one drill rig on August 26, 1991. A second drill rig was mobilized September 10, 1991. As of September 30, 1991, two borehole and eight monitor wells

were completed. Eleven core samples have been collected for VOC analysis. The samples have been packaged and shipped to laboratories for analysis.

The Surficial Soils Sampling program continues to be on schedule. Seventeen test pits are completed out of the total 26 as of September 30, 1991. 132 surficial soil samples and 110 soil samples from the test pits have been collected and shipped for analysis. The CDH sample sites were completed as of September 23, 1991.

On September 9, 1991, EPA and CDH were presented with a Revised Technical Memorandum No. 2 detailing RFP's approach to chemical analysis of environmental samples on OU2. A brief orientation was provided to facilitate regulatory agency review. Negotiations were finalized September 26, 1991. Final Technical Memorandum No. 2 will be formally submitted to the EPA in October.

PLANNED WORK FOR OCTOBER:

Drilling and sampling activities continue on OU1 RI.

PROBLEMS: None

OPEN ITEMS: None

3.2.2 OU2 REMEDIATION

SCOPE OF WORK CHANGES: None

TECHNICAL APPROACH CHANGES: None

MILESTONE ACCOMPLISHMENTS:

Submit Draft Proposed IM/IRA Decision Document	19 Jun 90
Submit Proposed Plan IM/IRA Decision Document	18 Sep 90
Submit Draft Responsiveness Summary	13 Dec 90
Submit Draft Responsiveness Summary and Final IM/IRA Decision Document	11 Jan 91
Field Treatability Test System Installation Complete	12 May 91
Begin Field Treatability Testing (Carbon System)	13 May 91
Begin Field Treatability Tests (Entire System)	*

* Scheduled completion date was September 30, 1991. Extension request denied by EPA and CDH.

SEPTEMBER WORK ACTIVITY STATUS:

The Granular Activated Carbon (GAC) treatment system collected, treated, and discharged over 300,000 gallons of surface water during September. The system has been operating and continues

24-hour manned operation without problems. Contract negotiations for the addition of SW 132 collection system and minor GAC system modifications took place on September 12, 1991. Reconfiguration of the lead/polish vessels was successfully completed on September 13, 1991.

Concerns relative to the effectiveness of decontamination and system modifications were raised about the UMTRA radionuclide removal unit. The vendor, M. K. Ferguson verbally rescinded the transfer offer for the UMTRA radionuclide removal equipment to the Rocky Flats Plant on September 11, 1991 because they had not received a written commitment. DOE/RFO is continuing the design/build option for a new radionuclides removal system through United Engineers and Constructors/Stearns Roger Division (UE&C). The specifications and drawings package from UE&C is being reviewed by EG&G.

Woodward-Clyde, an EG&G subcontractor, started preparation of the Bench-Scale Treatability Study Report for the OU2 South Walnut Creek IM/IRA. This report will present results of only activated carbon and precipitation bench-scale tests which were performed in late 1990 on surface water in the South Walnut Creek Basin. Additional tests were not performed due to lack of radionuclides in the water.

Historical data was retrieved from the Rocky Flats Environmental Database System (RFEDS) in order to begin the OU2 Historical Data Assessment. This project will support colloidal studies for OU2 Walnut Creek, as well as microfiltration under the Sitewide Treatability Studies Program. A draft Historical Data Assessment Report was submitted to EG&G by September 20, 1991 for review and comment. The selected water treatment method is chemical precipitation with microfiltration, followed by granular activated carbon absorption. In chemical precipitation, chemical additives cause metals and soluble radionuclides in the water to form particles large enough to be filtered or settled out.

The draft Interim Measures/Interim Remedial Action/Environmental Assessment (IM/IRA/EA) Plan for Woman Creek is continuing through the DOE/HQ approval process. The revised draft Plan was submitted for DOE/HQ approval on September 6, 1991. The draft IM/IRA/EA plan was formally submitted to EPA and CDH for review and comment on October 2, 1991. A meeting was held September 20, 1991 among EPA, CDH, EG&G, DOE/RFO, and R. F. Weston to discuss the selected No Action alternative and to open lines of communication before the regulatory agencies formally receive the document on October 2, 1991. The proposed No Action alternative was verbally rejected by the regulatory agencies. The agencies indicate other alternatives reflecting more of a final action would be considered. DOE directed EG&G to pursue other alternatives which will be presented to EPA and CDH on October 9, 1991.

PLANNED WORK FOR OCTOBER:

Operation of the South Walnut Creek IRA GAC unit will continue.

Pending approval by DOE/HQ, the Draft IM/IRA Plan for the Woman Creek Phase of OU2 will be submitted to the regulatory agencies on October 2, 1991.

PROBLEMS:

The September 30, 1991 milestone for completion of construction of the entire treatment system (metals/radionuclides system) at South Walnut Creek was not met. Delays, primarily associated with engineering/design and procurement activities are at issue with this milestone. EPA has rejected a DOE request for an extension of the milestone date.

OPEN ITEMS:

DOE is considering evoking dispute resolution per the IAG

3.3 OU3 - OFFSITE AREAS

DESCRIPTION:

OU3 can be divided into two categories based on the two drivers of the activities. The IAG directs activities according to CERCLA. This involves assessment of contamination in offsite areas also referred to as Individual Hazardous Substance Sites (IHSSs) (previously referred to as SWMUs): Contamination of the Land Surface (IHSS 199), Great Western Reservoir (IHSS 200), Standley Lake (IHSS 201), and Mower Reservoir (IHSS 202). The second category responds to a 1985 out-of-court lawsuit settlement, McKay v. U.S., which directed that the surface soil contamination be remediated. Remedial activities in compliance with the Settlement Agreement (deep disc plowing) began in 1985. The disturbance resulting from remediation is being revegetated with mediocre success. The overall schedule for this activity is determined by the year-to-year success of the revegetation effort and requirements of the land owners.

SCOPE OF WORK CHANGES: None

TECHNICAL APPROACH CHANGES:

The number of sediment core samples is being examined in light of the large number of samples required under the current draft RFI/RI Work Plan and the resulting large cost for sample analysis. The revised plan is to obtain sufficient samples to validate older studies rather than conduct a new totally complete study. A statistical evaluation of the older data is needed to determine the number of samples needed to validate this older data.

MILESTONE ACCOMPLISHMENTS:

Submit Draft Past Remedy Report	26 Oct 90
Submit Draft Historical Information/Preliminary Health Risk Assessment Report	09 Nov 90
Submit Final Past Remedy Report	02 Apr 91
Submit Final Historical Information/Preliminary Health Risk Assessment Report	16 Apr 91
Submit Draft Phase I RFI/RI Work Plan	10 Jul 91

SEPTEMBER WORK ACTIVITY STATUS:

The Jefferson County Remedy Lands Semi-annual Report was delivered by EG&G to RFO for submittal to Jefferson County. This report details results of soil sampling and revegetation activities on the Settlement Agreement Lands east of Indiana Street. Soil sample results were compared to the Colorado State plutonium in soil standard of 0.9 pCi/g as directed by the Settlement Agreement. Several previously-tilled strips are greater than the 0.9 pCi/g requirement and under the Settlement Agreement require additional tilling. Several untilled strips, previously thought to require tilling, are less than 0.9 pCi/g and will not require tilling. Adjustments to the revegetation plan outlined in the "Jefferson County Remedial Action Lands January 1991 Report" have been made following further consultation with revegetation specialists. Adjustments include expanding the seed mix composition,

broadcasting the seed mix rather than drilling or hydroseeding, and not planting a spring-seeded cover crop.

Meetings with EPA and CDH to discuss early informal comments on the draft OU3 RFI/RI Work Plan are continuing. The regulatory agencies are generally receptive to the Work Plan, and the discussions will improve development of the final Work Plan. Official comments are due from the regulatory agencies on October 7, 1991.

The final meeting with the Technical Review Group (TRG) on the OU3 draft RI Work Plan was held September 16, 1991. The TRG comments were generally constructive and were recorded for incorporation with EPA comments on the draft Work Plan.

EPA and EPA contractor representatives toured OU3 with EG&G staff and contracted RI Work Plan ecologists to discuss development of the Environmental Evaluation Work Plan (EEW). The existing EEW contained in the draft RFI/RI Work Plan, currently in EPA/CDH review, does not follow a format consistent with the accepted OU5 EEW. The OU3 EEW was written prior to changes and negotiations that define the current EEW format. The OU3 EEW will be reformatted and updated for review prior to submittal of the final RFI/RI Work Plan on December 6, 1991.

PLANNED WORK FOR OCTOBER:

Preparation of the final Phase I RFI/RI Work Plan will continue.

PROBLEMS:

Remedial actions required under the 1985 McKay vs. U.S. Settlement Agreement may be in conflict with CERCLA. Tilling of the land surface to mix plutonium contaminated surface soil, as required under the Settlement Agreement, prior to completion of the RI/FS will probably not be allowed by EPA. The remedial action as determined by the RI/FS process, if any, will probably not include plutonium soil mixing through tilling.

OPEN ITEMS:

The draft RFI/RI Work Plan is being reviewed by EPA/CDH. Review comments are due October 7, 1991.

3.4 OU4 - SOLAR PONDS

DESCRIPTION:

Five solar evaporation ponds were used for storage of low-level radioactive process waste, sanitary treatment plant effluent, and contaminated ground water collected downgradient of the ponds. The ponds are RCRA interim status regulated units that are currently under closure. Leakage from the ponds has contaminated soils and ground water with various contaminants.

SCOPE OF WORK CHANGES: None

TECHNICAL APPROACH CHANGES: None

MILESTONE ACCOMPLISHMENTS:

Submit Draft Phase I RFI/RI Work Plan

08 Jun 90

SEPTEMBER WORK ACTIVITY STATUS:

Revision of the Interim Measure/Interim Remedial Action (IM/IRA) Plan was completed and delivered to DOE/RFO on September 3, 1991. CDH has given conditional approval of the Plan. The IM/IRA focuses on the use of temporary surge tanks and flash evaporators to process liquids from the solar evaporation ponds and ground water collected from the interceptor trench system. The proposed OU4 - Solar Evaporation Ponds IM/IRA Decision Document was released for a 60-day public comment period beginning September 9, 1991. The IM/IRA process was required by EPA and CDH to permit the use of the flash evaporators and surge tanks.

An EG&G subcontract to prepare the OU4 final Phase I RFI/RI Work Plan was awarded September 20, 1991.

PLANNED WORK FOR OCTOBER:

Continue work on the OU4 final Phase I RFI/RI Work Plan

PROBLEMS:

The delay in removal of sludge from the solar ponds and the requirement for an IM/IRA for the surge tanks will impact the scheduled start of the RFI/RI field activities in January 1992. Further information regarding any schedule impacts will be available after the public comment period ending November 6, 1991.

OPEN ITEMS: None

3.5 OU5 - WOMAN CREEK

DESCRIPTION:

This activity encompasses assessment and remediation at the Woman Creek drainage, to include: Original Landfill; Ash Pits 1-4, Incinerator, and Concrete Wash Pad; Retention Ponds C-1 and C-2; and the surface disturbance southeast of Building 881.

SCOPE OF WORK CHANGES: None

TECHNICAL APPROACH CHANGES: None

MILESTONE ACCOMPLISHMENTS:

Submit Draft Phase I RFI/RI Work Plan	05 Apr 91
Submit Final Phase I RFI/RI Work Plan	30 Aug 91

SEPTEMBER WORK ACTIVITY STATUS:

The regulatory agencies reviewed the final Phase I RFI/RI Work Plan for Woman Creek Drainage. Comments were received by RFO on September 30, 1991. The RFI/RI will investigate and define the site physical characteristics, define the sources of contamination, and describe the nature and extent of contamination.

PLANNED WORK FOR OCTOBER:

Initiate resolution of comments on the final RFI/RI Work Plan with EPA and CDH

PROBLEMS: None

OPEN ITEMS:

Response from EPA and CDH on the final Work Plan are due on October 1, 1991.

3.6 OU6 - WALNUT CREEK

DESCRIPTION:

This activity encompasses assessment and remediation at the Walnut Creek Drainage, to include: Sludge Dispersal; Retention Ponds A-1, A-2, A-3, A-4, A-5, B-1, B-2, B-3, B-4, and B-5; Old Outfall; Triangle Area; Trenches A, B, and C; and the North, South, East and Pond Area Spray Fields.

SCOPE OF WORK CHANGES: None

TECHNICAL APPROACH CHANGES: None

MILESTONE ACCOMPLISHMENTS:

Submit Draft Phase I RFI/RI Work Plan	19 Apr 91
Submit Final Phase I RFI/RI Work Plan	16 Sep 91

SEPTEMBER WORK ACTIVITY STATUS:

DOE received comments from EPA, CDH, and other agencies on the draft OU6 - Walnut Creek Phase I RFI/RI Work Plan. The comments were addressed in the final Phase I Work Plan and the Response to Comments Documents. RFO delivered the final Work Plan to EPA and CDH, the regulatory agencies, on September 16, 1991, the IAG milestone date. We are waiting for the agencies' review of the document.

PLANNED WORK FOR OCTOBER: None

PROBLEMS: None

OPEN ITEMS:

Comments on the final Phase I RFI/RI Work Plan are due back to DOE/RFO on October 15, 1991.

3.7 OU7 - PRESENT LANDFILL

DESCRIPTION:

The Present Landfill began operation in 1968. The landfill provided a means of disposing nonradioactive and nonhazardous solid waste. Some of the solid wastes from the plant, which were disposed in the landfill, are suspected to have contained hazardous waste and/or hazardous constituents. Although currently operating as a nonhazardous sanitary landfill, the facility is considered an inactive hazardous waste disposal unit undergoing RCRA closure.

SCOPE OF WORK CHANGES: None

TECHNICAL APPROACH CHANGES: None

MILESTONE ACCOMPLISHMENTS:

Submit Draft Phase I RFI/RI Work Plan
Submit Final Phase I RFI/RI Work Plan

08 Jun 90
28 Aug 91

SEPTEMBER WORK ACTIVITY STATUS:

EPA and CDH have given "conditional approval" on the OU7 final Phase I RFI/RI Work Plan. RFO is developing a schedule for completing a revision of the plan to incorporate agency comments.

PLANNED WORK FOR OCTOBER:

Address EPA and CDH comments received as "conditional approval" for the Phase I RFI/RI Work Plan.

PROBLEMS: None

OPEN ITEMS: None

3.9 OU9 - ORIGINAL PROCESS WASTE LINES

DESCRIPTION:

This activity involves characterizing a series of tanks and associated process waste lines. The system was constructed to transport and temporarily store aqueous process wastes. Soil characterization studies will determine the need for soil removal and/or treatment.

SCOPE OF WORK CHANGES: None

TECHNICAL APPROACH CHANGES: None

MILESTONE ACCOMPLISHMENTS:

Submit Draft Phase I RFI/RI Work Plan

08 Jun 90

SEPTEMBER WORK ACTIVITY STATUS:

The regulatory agencies' comments on the draft Phase I RFI/RI Work Plan were received September 30, 1991. The Phase I RFI/RI Work Plan is in revision.

PLANNED WORK FOR OCTOBER:

Continue work on the final Phase I RFI/RI Work Plan which is due to the agencies on November 26, 1991.

PROBLEMS: None

OPEN ITEMS: None

3.10 OU10 - OTHER OUTSIDE CLOSURES

DESCRIPTION:

OU10 is made up of 18 IHSSs consisting of various hazardous waste units. An RFI/RI Work Plan is currently in preparation. The primary components of the RFI/RI Work Plan for OU10 will be a Field Sampling Plan (FSP), Baseline Risk Assessment Plan (BRAP), and an EE Work Plan.

SCOPE OF WORK CHANGES: None

TECHNICAL APPROACH CHANGES: None

MILESTONE ACCOMPLISHMENTS:

The first IAG milestone for this OU is scheduled for November 1991.

SEPTEMBER WORK ACTIVITY STATUS:

Three additional individual hazardous substance sites (IHSSs) were transferred from other operable units to OU10 after the draft RFI/RI Work Plan was completed in FY90. The draft Work Plan was based on the draft IAG which was modified during final IAG negotiations. A contract modification has been initiated to incorporate the three IHSSs into the draft work plan and to perform general upgrades to the plan.

PLANNED WORK FOR OCTOBER:

Continue revision to the RFI/RI Work Plan.

PROBLEMS: None

OPEN ITEMS: None

3.11 OU11 - WEST SPRAY FIELD

DESCRIPTION:

The West Spray Field is located within Rocky Flats property boundary immediately west of the plant security area. The West Spray Field was in operation from April 1982 to October 1985. During operation, excess liquids from the solar evaporation ponds 207-B North and Center (contaminated groundwater in the vicinity of the ponds and treated sanitary sewage effluent) were pumped periodically to the West Spray Field for spray application. The spray field boundary covers an area of approximately 105.1 acres, 38.3 of which received direct application of hazardous waste. The RFI/RI process will entail field studies to determine the presence and levels of hazardous constituents in soil and groundwater.

SCOPE OF WORK CHANGES: None

TECHNICAL APPROACH CHANGES: None

MILESTONE ACCOMPLISHMENTS:

Submit Draft Phase I RFI/RI Work Plan

08 Jun 90

SEPTEMBER WORK ACTIVITY STATUS: None

PLANNED WORK FOR OCTOBER:

Comments are due back from the regulatory agencies by October 25, 1991.

PROBLEMS:

Western Aggregate has submitted a request to DOE to mine the mineral resources for which they own the rights and which are under a portion of the western edge of the Rocky Flats Plant. The land in question is located within Operable Unit 11 - West Spray Field. DOE has had preliminary discussions with EPA on this matter, and EPA agrees with DOE that a decision for any mining operations should be delayed until the OU assessment is complete. The DOE/RFO legal staff is reviewing the request from Western Aggregate. A meeting between the parties was held in September. Results are forthcoming.

OPEN ITEMS:

EPA/CDH review comments on the draft RFI/RI Work Plan are due October 25, 1991.

3.12 SITEWIDE ACTIVITIES

DESCRIPTION:

Sitewide activities include several tasks that encompass a wide variety of plans, procedures, reports, studies, and other activities required by the IAG and that apply to RFP environmental restoration activities in general.

SCOPE OF WORK CHANGES: None

TECHNICAL APPROACH CHANGES: None

MILESTONE ACCOMPLISHMENTS:

Submit Draft Background Study Report (Water)	15 Dec 89
Submit Draft Background Study Report (Soils)	15 Dec 89
Submit Draft Community Survey Plan	23 Jan 90
Submit Final Community Survey Plan	22 Mar 90
Submit Draft Health and Safety Plan	15 Aug 90
Submit Draft Quality Assurance Project Plan	29 Aug 90
Submit Draft Standard Operating Procedures	29 Aug 90
Submit Draft Plan for Prevention of Contaminant Dispersion	19 Sep 90
Submit Draft Treatability Study Plan	21 Sep 90
Submit Draft Community Relations Plan	01 Nov 90
Submit Final Health and Safety Plan	12 Nov 90
Submit Revised Background Study Report	21 Dec 90
Submit Final Community Relations Plan	22 Jan 91
Submit Final Quality Assurance Project Plan	01 Mar 91
Submit Final Standard Operating Procedures	01 Mar 91
Submit Draft Radionuclides Discharge Limits Plan	05 Apr 91
Submit Community Relations Plan Responsiveness Summary	21 Jun 91
Submit Final Treatability Study Plan	03 Jun 91
Submit Final Plan for Prevention of Contaminant Dispersion	22 Jul 91
Submit Final Plan Discharge Limits Radionuclides	16 Sep 91

SEPTEMBER WORK ACTIVITY STATUS:

Plan for Prevention of Contaminant Dispersion

On July 22, 1991, the final Plan for Prevention of Contaminant Dispersion (PPCD) was submitted to EPA/CDH for review, and on July 30, 1991, a public comment period on the plan began. At the public's request, the end of the comment period was extended from September 23, 1991 to October 7, 1991. The target date for EPA/CDH approval of the final PPCD is December 28, 1991.

Discharge Limits for Radionuclides

Approval was received from EPA and CDH on August 9, 1991 granting an extension of the milestone date for delivery of the final Work Plan for Discharge Limits for Radionuclides from August 13, 1991 to September 16, 1991. DOE/RFO submitted the final Work Plan to EPA and CDH on the milestone date of September 16, 1991. This extension was necessary because of the extension granted by the regulatory agencies for submittal of the draft plan and because of the wide-ranging comments made by agency reviewers.

The primary focus of this work plan is the monitoring and control of radionuclide concentrations in discharge water. The work plan describes analytical protocols and methods for the determination of radionuclide levels, presents statistical assessments of accumulated analytical results, and recommends additional radionuclide studies to better characterize the water quality of Rocky Flats Plant discharges. The work plan describes current procedures for planning, approving, and conducting offsite discharges of water from the RFP terminal ponds A-5, B-5, and C-2. Procedures for implementing the discharge plan are reviewed, and methods for streamlining operations are proposed. Current treatment approaches and limitations are reviewed, and plans for future treatability studies are addressed.

EG&G is preparing the "Response to Comment Document" for this work plan. EPA and CDH approved the following revised schedule for finalization of the plan:

- Public Comment Period - November 24, 1991 through November 21, 1991
- Public Comment Response - November 22, 1991 through January 30, 1992
- Submit Responsiveness Summary - January 30, 1992 (IAG Milestone)
- EPA and CDH Review Responsiveness Summary and Approval of the Plan - January 31, 1992 through March 2, 1992

Environmental Evaluations (EE)

A meeting of the Risk Assessment Technical Working Group was held on September 4, 1991 to further discuss Chemicals of Concern and Target Taxa selection criteria and the matrices for selecting each. In addition, initial discussions of pathway analysis for environmental evaluations and of toxicity test protocols were held.

The first phase of vegetation production measurements was completed, and the Fall bird and fish sampling were initiated for OUs 1, 2, and 5. Fall samples for small mammals continued and sampling for aquatic macrobenthos was initiated. Fall sampling for terrestrial insects was completed. In situ water chemistry samples were collected from all sites.

A meeting among DOE/RFO, EG&G, and the U.S. Fish and Wildlife Service to discuss the Migratory Bird Act and the Fish and Wildlife Coordination Act was held on September 19, 1991.

Work was initiated to add protocols for biota samples to the Quality Assurance Project Plan (QAPP). Initial preparation was performed to develop a Standard Operating Procedure (SOP) dealing with Threatened and Endangered Species in response to an EPA requirement. This SOP will be prepared and submitted to the agencies by October 15, 1991.

The U.S. Fish and Wildlife Service and the Colorado Division of Wildlife toured the OU1 french drain area and Woman Creek to assist in discussions of the Threatened and Endangered Species Act, the Migratory

Bird Act and the Fish and Wildlife Coordination Act on September 26, 1991. This task is part of the consultation process required by the Threatened and Endangered Species Act.

Possible Threatened and Endangered Species Located

A Category 2 species under the Threatened and Endangered Species Act, Prebles' Meadow Jumping Mouse - *Zapus Hudsonius preblei*, was observed in the Woman Creek Drainage. The Fish and Wildlife Service (FWS) was informed, and the consultation process between FWS and DOE was initiated.

Sitewide Treatability Study Program

DOE/RFO received comments from The Nevada Test Site on the draft Work Plan for the Treatability Study (TSWP) on plutonium contaminated soil. The comments are being incorporated into the TSWP. A revised draft is scheduled to be delivered to RFO by October 11, 1991. Some sections of this work plan have also been submitted to EG&G at the Nevada Test Site (NTS) for review and comment.

The NTS is planning to perform bench-scale testing under the Integrated Demonstration (ID) Program sponsored by the Office of Technology Development. The IAG requires the Treatability Program at the RFP to do the same type of bench-scale testing for the treatment of plutonium-contaminated soil. In addition, the Field Sampling Plan and the Sampling Health and Safety Plan for this task are undergoing revisions. Finalization of these documents is scheduled to be completed before the transmittal of the TSWP on plutonium-contaminated soil to EPA and CDH.

Colorado Department of Health Approves Part A RCRA Permit Modifications

In a letter dated August 30, 1991 to RFO, CDH approved the Part A RCRA permit modification for the decontamination facility located at the 881 Hillside, the granular activated carbon (GAC) unit at the 231A tank area, the interim waste storage facility for ER Program-generated wastes (Tent 1), and the proposed permanent Environmental Management Drum Storage Facility. However, CDH did not issue the Part A permit modification for additional waste codes for the 231A tank for storage of decontamination facility and well purge waters. This issue was raised to CDH during a meeting among EG&G, RFO, and CDH held September 12, 1991.

ARARs Policy at the RFP

EPA and CDH sent a letter to RFO requesting that Sitewide ARARs be developed for the RFP. In addition, CDH expressed their desire to hold a meeting with EPA, RFO, and EG&G to discuss ARARs policy. The meeting will be scheduled as soon as possible.

PLANNED WORK FOR OCTOBER:

Development of EPA required Standard Operating Procedure for Threatened and Endangered Species Act

Continue work on draft Work Plan for the Treatability Study (TSWP)

Continue preparation of the "Response to Comment Document" for Discharge Limits for Radionuclides

Work Plan

PROBLEMS: None

OPEN ITEMS: None

4.0 ROUTINE ENVIRONMENTAL MONITORING

The following generalized sampling schedule for Routine Environmental Monitoring is provided as requested in Section 210 of the IAG. Detailed quarterly monitoring schedules are prepared in advance and are available to EPA and CDH upon request from the Environmental Monitoring and Assessment Division, Environmental Management Department, and EG&G Rocky Flats, Inc. The schedules are lengthy; therefore, they are not reproduced here. An EPA- or State-authorized representative may make arrangements to observe fieldwork and to obtain split or duplicate samples.

SURFACE WATER AND SEDIMENTS:

Each of the Surface Water Stations (approximately 120 stations) are sampled monthly.

Each of the Sediment Stations (approximately 40 stations) are sampled quarterly.

Each surface water and sediment sample is analyzed for the following parameters:

CLP TCL VOAs	Major Anions
CLP TAL Metals	Radionuclides
plus Cesium	Field Parameters
Lithium	pH
Molybdenum	Temperature
Strontium	Specific Conductivity
Tin	Dissolved Oxygen (DO)
	Turbidity

SOILS:

Each of the Soil Stations (located at 1- and 2-mile radii from the plant center) are sampled annually.

Each soil sample is analyzed for plutonium and americium.

GROUNDWATER:

259 of the 371 total Groundwater Stations are sampled quarterly; this includes alluvial wells, bedrock wells, and pre-1986 wells. Approximately one third of the wells are monitored monthly for water levels.

Each groundwater sample is analyzed for CLP, TCL, VOAs, CLP, TAL, Metals, as well as the following parameters:

<u>Radiochemical Parameters</u>	<u>Inorganic Parameters</u>	<u>Field Parameters</u>
Gross Alpha Tritium	Nitrate/Nitrite	Dissolved Oxygen (DO)
Gross Beta Lithium	Total Phosphorous	Specific Conductivity
Plutonium Uranium	Ortho-Phosphate	Temperature
Americium Cesium	Ammonia	Turbidity
Strontium Tin		pH
Molybdenum		

5.0 CONTRACTOR/SUBCONTRACTOR IDENTIFICATION

Contractors and subcontractors being used on the Rocky Flats Plant Environmental Restoration Program and the work they are performing are identified on the following list as required by paragraph 13 of the IAG.

OU	PROJECT	SUBCONTRACTOR	SUB- SUBCONTRACTOR	WORK DESCRIPTION	START DATE
1	Assessment	Ebasco	Dames & Moore Stoller Corp.	OU1 RFI/RI fieldwork (drilling, well development/ completion, sampling) and RI report	Apr-91
1	Remediation	Advance Tanks		Fabricate/Install effluent storage tanks for OU1 IRA	Oct-91
1	Remediation	Bruner		OU1 IRA Ion exchange system	Feb-91
1	Remediation	E.T. LaFore		Installation of Phase II-A treatment system equipment for OU1 IRA	Jun-91
1	Remediation	Eng Sciences		Design Phase II-B French drain for OU1 881 Hillside IRA	Sep-90
1	Remediation	Jennison		Construct Phase II-B French drain at OU1 IRA	Aug-91
1	Remediation	P.S.I.		UV bench scale testing for volatile organics	Aug-91
2	Assessment	Woodward-Clyde		OU2 RFI/RI Work Plan (alluvial & bedrock) and RI fieldwork (drilling, well completion/development)	Sep-90
2	Assessment	Weston	CH2M Hill	OU2 RFI/RI Alluvial Work Plan	Nov-90
2	Remediation	Riedel Env. Svcs.		Fabricate/Install/operate GAC/FTU system for South Walnut Creek Phase of OU2 IRA.	Apr-91
2	Remediation	Stearns Rogers		Performance Specification for chemical precipitation/ membrane/filtration system for South Walnut Creek Phase of OU2 IRA	Jun-91
2	Remediation	Weston		IRAP, EA, Risk Assessment, and Historical Assessment for Women Creek	Jun-91
2	Remediation	Woodward-Clyde		Conduct bench-scale tests on surface water	May-91
3	Assessment	IT Corporation		OU3 RI Work Plan	Mar-91
3	Assessment	IT Corporation		Revegetate offsite lands	Jun-91
4	Assessment	IT Corporation		OU4 RFI/RI Work Plan including Environmental Evaluation Plan and Quality Assurance Addendum	TBD
4	Remediation	IT Corporation	CH2M Hill	Prepare OU4 IM/IRA Action Plan	Jul-90
5	Assessment	Woodward-Clyde		OU5 RFI/RI Work Plan including Environmental Evaluation Plan and Quality Assurance Addendum	Feb-90
6	Assessment	Woodward-Clyde		OU6 RFI/RI Work Plan including Environmental Evaluation Plan and Quality Assurance Addendum	Feb-90

OU	PROJECT	SUBCONTRACTOR	SUB-SUBCONTRACTOR	WORK DESCRIPTION	START DATE
7	Assessment	IT Corporation	Stoller Corp.	OU7 RFI/RI Work Plan including Environmental Evaluation Plan and Quality Assurance Addendum	Apr-90
9	Assessment	IT Corporation		OU9 RFI/RI Work Plan including Environmental Evaluation Plan and Quality Assurance Addendum	Mar-90
10	Assessment	Ebasco		OU10 RFI/RI Work Plan including Environmental Evaluation Plan and Quality Assurance Addendum	TBD
11	Assessment	IT Corporation		OU11 RFI/RI Work Plan including Environmental Evaluation Plan and Quality Assurance Addendum	TBD
SW	Hist. Rel. Rep.	IT Corporation	Doty & Assoc.	Prepare Historical Release Report	Feb-91
SW	PCB Assess.	TBD		Prepare PCB Assessment Report	Nov-91
SW	Adm. Record	QuantaLex		Maintain IAG Administrative Record	Oct-90
SW	Geolog. Char.	ASI		Geologic Characterization, Data Base, and graphics	Feb-90
SW	Monitoring	Ebasco		Analytical Services for groundwater, surface water, and sediment	Dec-90
SW	Monitoring	IT Corporation		Analytical Services for groundwater, surface water, and sediment	Jul-90
SW	Fid. Oversight	Ebasco	Stoller Corp	ER field operations oversight	Oct-90
SW	Treatability	Ebasco		Sitewide treatability studies - Pu contaminated soils	Apr-90
SW	Treatability	Woodward-Clyde		Technical evaluation of sitewide treatability studies	Jul-90
SW	PPCD	Ebasco		Plan for Prevention of Contaminant Dispersion	Jun-90
SW	QA	Ebasco	SAIC	Develop and implement quality assurance program and field operations oversight	Dec-90
PM	Support	Ebasco	Stoller Corp.	Program Management Support	Feb-90